

**What is claimed is:**

1. A WideBand cross-connect system comprising:

at least one SONET add/drop multiplexer being outfitted so as to support SONET UPSR protection with PDI-P codes;

a working WideBand switch fabric coupled to said at least one SONET add/drop multiplexer, said working switch fabric receiving a working signal from a first interface on said at least one SONET add/drop multiplexer, said working signal and working payload, said working switch fabric switching said working signal so as to generate a working switched signal and to generate a working PDI-P code and working switched payload, and providing said working switched signal to a second port on said at least one SONET add/drop multiplexer;

a protect WideBand switch fabric coupled to said at least one SONET add/drop multiplexer, said protect switch fabric receiving a protect signal from a third interface on said at least one SONET add/drop multiplexer, said protect signal and protect payload, said protect switch fabric switching said protect signal so as to generate a protect switched signal and to generate a protect PDI-P code and protect switched payload, and providing said protect switched signal to a fourth port on said at least one SONET add/drop multiplexer;

wherein said at least one SONET add/drop multiplexer selects between said working switched payload and said protect switched payload to send to a client based upon said working PDI-P code and said protect PDI-P code.

2. A WideBand cross-connect system as in claim 1, wherein said at least one SONET add/drop multiplexer comprises a single SONET add/drop multiplexer.

3. A WideBand cross-connect system as in claim 1, wherein said at least one SONET add/drop multiplexer comprises a plurality of SONET add/drop multiplexers.

4. A WideBand cross-connect system as in claim 3, wherein said first port and said third port are on different SONET add/drop multiplexers of said plurality of SONET add/drop multiplexers.

5. A method of providing equipment protection in a WideBand cross-connect system comprising the steps of:

accepting an input client signal, said input client signal comprising payload, in at least one SONET add/drop multiplexer;

sending said payload to a working and a protect switch fabric;

switching said payload and generating said PDI-P codes in each of said working and protect switch fabrics toward said at least one SONET add/drop multiplexer;

receiving switched payload and said PDI-P codes from each of said working and protect switch fabrics at said at least one SONET add/drop multiplexer;

analyzing said PDI-P codes and selecting said switched payload from either said working or said protect switch fabric as a working client payload based upon said analysis.

6. The method of providing equipment protection as in claim 5, wherein said PDI-P codes comprise a working PDI-P code and a protect PDI-P code and said analysis comprises comparing said working PDI-P code and said protect PDI-P code to determine which of said working PDI-P code and said protect PDI-P code indicates a less defective path.

7. The method of providing equipment protection as in claim 5, further comprising a step of outputting a SONET signal comprising said working client payload.